

Remedial Design Milestones

Complete

- ✓ Project Management Plan
- ✓ Pre-Design Investigation WorkPlan
- ✓ Remedial Design Work Plan
- ✓ Site Selection and EvaluationWork Plan
- ✓ Site Selection and Evaluation Report
- ✓ Preliminary (30%) RemedialDesign March 29, 2019

Remaining

- ☐ Pre-Design Investigation Evaluation
 Report
- ☐ Intermediate (60%) Remedial Design
- ☐ Pre-Final (95%) Remedial Design
- ☐ Final (100%) Remedial Design

Ongoing

- > EPA Oversight Reimbursement
- > Corporate Financial Assurance



Preliminary (30%) Design Deliverables to EPA

- Design Criteria Report: Compiles the criteria and requirements that the design will need to meet
- Basis of Design Report: Engineering evaluations and analyses on which the design components will be based
- Preliminary Drawings: Detailed representation of existing conditions, some preliminary design
- Transportation and Off-Site Disposal Plan: Initial evaluation of disposal options



Design Elements for the Intermediate (60%) Design

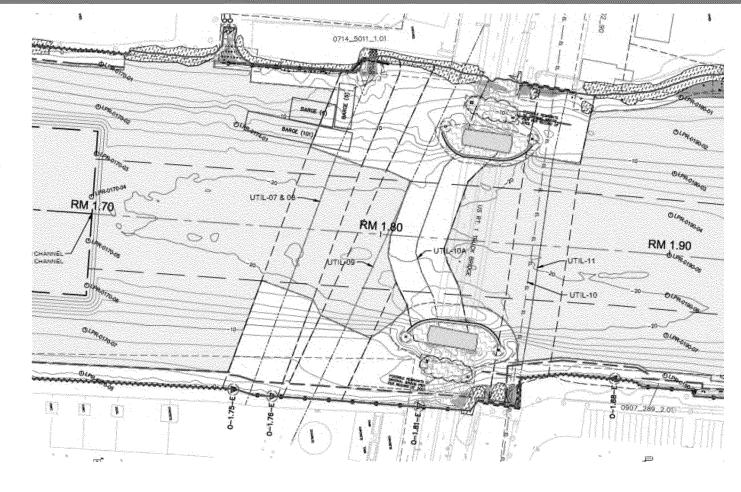
- Cap Design
 - > No change in flood rise potential
 - > Resist erosion
 - > Isolate deeper impacted sediments
- Dredge Plan
 - > Design for physical constraints
 - > Make room for cap
 - > Minimize sediment resuspension
- Sediment Processing Facility
 - > Sediment dewatering
 - > Water treatment



Existing Conditions Detail

Physical Constraints

- >Bridges
- >Utilities
- > Hardened Shoreline
- >Outfalls
- > Mudflats





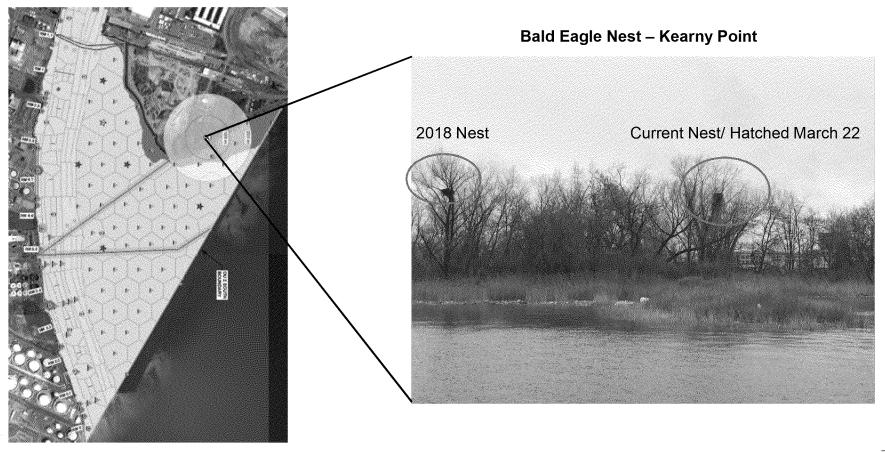
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2019 Additional Pre-Design Activities

- •Sediment core collection near bridges, utilities and Kearny Point for chemistry
- Geotechnical Marine borings and bulkhead/shoreline work
- Pore water sampling within sediments
- Engineering studies with data collected last year (Treatability Studies)
 - > Cap Material Selection
 - > Cap Constructability and Placement Methods
 - > Water Treatment Technology Review
 - > Sand Separation Testing



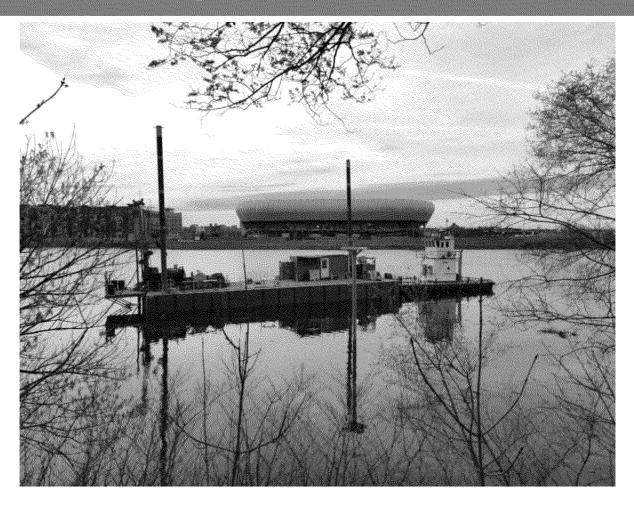
Additional Data Collection Near Kearny Point - March-June 2019





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Geotechnical Borings – March-June 2019





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Bulkhead and Structures Surveys - Parallel Seismic





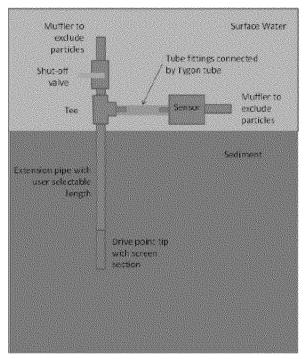


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Pore Water Field Work - Underwater Equipment Installation



Differential Pressure Piezometer



Design Engineering Process

